

## PHOTOCROMIC MATERIAL

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### Abstract

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**PURPOSE:** To form a photochromic material which can be made to undergo ring-opening isomerization even by a visible light, and is excellent in durability in the repeated ring-opening and ring-closing isomerizations by using a specified spirooxazine compound as principal component.

**CONSTITUTION:** A photochromic material is produced by using a compound of formula I (wherein a ring is, e.g. a five- or six-membered ring containing one nitrogen atom; R<2> and R<3> are each hydroxy, amino, 1-20C alkoxy, 7-15C alkoxy, etc.; X is a 2-40C substituent containing a structure of formula II; (m) is 0 to 3; beta ring is a 3-18C ring combined with a benzoxazine ring to form condensed rings, but it may be absent) as principal component. When irradiated with a visible or ultraviolet light, this material undergoes isomerization from an open-ring state to a closed-ring state, showing the change from an arbitrary color to a different color or from a colorless state to a colored state; therefore, it is suitably used for printing, optical instruments, recording medium, decorating material, etc.

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